

VERIFICATIONS.

[Verifications made by Professor C. F. Marvin, assisted by Mr. H. E. Williams, chief clerk of the Forecast Room.]

FORECASTS FOR 24 HOURS IN ADVANCE.

The forecasts for districts east of the Rocky Mountains for November, 1891, were made by 1st Lieutenant W. A. Glassford, Signal Corps, and those for the Pacific coast districts were made at San Francisco, Cal., by 1st Lieutenant John P. Finley, 15th Infantry, from 1st to 5th, inclusive, and by Mr. R. E. Kerkam, Chief of Division, Weather Bureau, from 6th to 30th, inclusive.

Percentages of forecasts verified, November, 1891.

State.	Weather.	Temperature.	Weather and temperature combined.	State.	Weather.	Temperature.	Weather and temperature combined.
Maine.....	90.7	84.7	88.3	Arkansas.....	81.7	89.0	84.6
New Hampshire.....	92.3	82.7	88.5	Tennessee.....	91.0	82.0	87.4
Vermont.....	92.7	86.0	90.0	Kentucky.....	90.3	78.7	85.7
Massachusetts.....	92.3	80.3	87.5	Ohio.....	98.0	81.3	85.3
Rhode Island.....	93.7	78.0	87.4	West Virginia.....	88.0	77.7	83.9
Connecticut.....	91.7	77.0	85.8	Indiana.....	88.7	78.0	84.4
Eastern New York.....	89.7	87.0	88.6	Illinois.....	87.3	76.0	82.8
Western New York.....	91.0	84.3	88.3	Lower Michigan.....	94.0	87.7	91.5
Eastern Pennsylvania.....	91.7	88.0	90.2	Upper Michigan.....	86.0	80.3	83.7
Western Pennsylvania.....	89.0	81.0	85.8	Wisconsin.....	91.0	85.3	88.7
New Jersey.....	88.7	94.0	90.8	Minnesota.....	83.0	78.7	81.3
Delaware.....	88.7	88.3	88.5	Iowa.....	83.3	80.0	82.0
Maryland.....	85.7	85.7	85.7	Kansas.....	87.0	79.0	83.8
District of Columbia.....	86.0	83.3	84.9	Nebraska.....	85.3	76.3	81.7
Virginia.....	88.3	87.3	87.9	Missouri.....	82.7	79.7	81.5
North Carolina.....	89.7	85.7	88.1	Colorado.....	93.0	75.3	85.9
South Carolina.....	88.7	81.7	85.9	North Dakota.....	84.7	64.7	76.7
Georgia.....	89.0	79.7	85.3	South Dakota.....	83.7	71.7	78.9
Eastern Florida.....	88.0	81.0	85.2	Northern California.....	97.3	76.7	89.1
Western Florida.....	89.3	80.7	85.9	Southern California.....	99.3	77.0	90.4
Alabama.....	90.3	89.7	90.1	Oregon.....	85.3	79.0	82.8
Mississippi.....	88.3	85.7	87.3	Washington.....	87.0	80.7	84.5
Louisiana.....	85.7	78.3	82.7				
Texas.....	91.7	81.3	87.5	Monthly percentage.....	88.6	81.7	85.8

In determining the monthly percentage of weather and temperature combined, the Pacific coast states are not included. The forecasts of temperature in districts east of the Rocky Mountains for November, 1891, were made with reference to the maximum temperature alone; that is, a prediction of warmer or cooler indicated that the maximum temperature of the day designated would be higher or lower than the maximum of the previous day. The monthly percentage of weather and temperature combined is determined by multiplying the percentage of weather by 6, and the percentage of temperature by 4, and dividing their sum by 10.

FORECASTS FOR 48 AND 72 HOURS IN ADVANCE.

Appreciating the great importance that long-time predictions possess for the general public, the Chief of the Weather Bureau has authorized forecasts for 48 and 72 hours, covering the 2d and 3d days in advance. These are optional with the forecast official, and are only made when clearly in the public interest, and cover, in all cases, considerable areas of country, and are not confined to localities.

Percentages of verifications of forecasts made for second day in advance. Number of predictions made: weather, 943; temperature, 499. Percentages of verifications: weather, 81.9; temperature, 71.7; weather and temperature combined, 79.2.

Percentages of verifications of forecasts made for third day in advance. Number of predictions made: weather, 23; temperature, 19. Percentages of verifications: weather, 83.5; temperature, 94.7; weather and temperature combined, 87.5.

WIND SIGNALS FOR NOVEMBER, 1891.

Statement showing percentages of justifications of wind signals for the month of November, 1891.

Wind signals.—(Ordered by 1st Lieutenant W. A. Glassford.) Total number of signals ordered, 187; justified as to velocity, wholly, 131, partly, 7; justified as to direction, 171. Of the signals ordered, 162 were cautionary, of which 113 were justified; and 25 were storm signals, of which 18 were wholly, and 7 partly justified; 64 signals were ordered for easterly winds, of

which 50 were justified, and 123 were ordered for westerly winds, of which 121 were justified. Number of winds without signals, 25. Number of signals ordered late, 28. Percentage of justifications, 71.4.

COLD-WAVE SIGNALS FOR NOVEMBER, 1891.

Cold-wave signals.—(Ordered by 1st Lieutenant W. A. Glassford.)—Number of signals ordered, 179, of which 141 were justified. Number of severe cold-waves without signals, 52. Percentage of justifications, 68.8.

FORECASTS FOR 24 HOURS IN ADVANCE.

The forecasts for districts east of the Rocky Mountains for December, 1891, were made by Major H. H. C. Dunwoody, Signal Corps, and those for the Pacific coast districts were made at San Francisco, Cal., by Mr. R. E. Kerkam, Chief of Division, Weather Bureau.

Percentages of forecasts verified, December, 1891.

State.	Weather.	Temperature.	Weather and temperature combined.	State.	Weather.	Temperature.	Weather and temperature combined.
Maine.....	88.4	87.1	87.9	Arkansas.....	92.9	89.7	91.6
New Hampshire.....	85.8	86.8	86.3	Tennessee.....	92.3	82.9	88.5
Vermont.....	86.1	91.9	88.4	Kentucky.....	91.3	83.2	88.1
Massachusetts.....	87.7	90.6	88.9	Ohio.....	88.7	85.2	87.3
Rhode Island.....	89.0	94.5	91.2	West Virginia.....	92.3	89.7	91.3
Connecticut.....	87.7	87.7	87.7	Indiana.....	92.9	91.9	92.5
Eastern New York.....	86.8	91.9	88.8	Illinois.....	88.1	85.2	86.6
Western New York.....	88.8	90.0	89.0	Lower Michigan.....	88.4	91.3	89.6
Eastern Pennsylvania.....	89.4	85.5	87.7	Upper Michigan.....	91.0	78.1	86.2
Western Pennsylvania.....	83.9	85.5	83.9	Wisconsin.....	89.4	85.8	88.0
New Jersey.....	89.3	89.5	89.4	Minnesota.....	93.5	91.9	92.9
Delaware.....	88.7	85.5	87.5	Iowa.....	89.0	87.1	88.2
Maryland.....	88.1	86.5	87.3	Kansas.....	89.0	75.2	81.7
District of Columbia.....	88.4	85.5	87.2	Nebraska.....	91.0	77.4	85.9
Virginia.....	89.4	89.4	89.4	Missouri.....	91.0	77.4	85.6
North Carolina.....	92.3	87.7	90.5	Colorado.....	86.8	81.0	84.5
South Carolina.....	87.7	88.1	87.9	North Dakota.....	84.8	86.8	85.6
Georgia.....	91.0	81.9	87.7	South Dakota.....	90.6	83.5	87.8
Eastern Florida.....	87.7	91.0	89.0	Northern California.....	85.7	75.7	81.7
Western Florida.....	85.2	94.5	88.9	Southern California.....	92.7	81.0	88.0
Alabama.....	90.0	93.2	91.3	Oregon.....	76.0	84.0	79.2
Mississippi.....	87.4	91.6	89.1	Washington.....	82.7	85.0	84.8
Louisiana.....	89.0	91.0	89.8				
Texas.....	93.9	91.0	92.7	Monthly percentage.....	89.1	87.3	88.4

FORECASTS FOR 48 HOURS IN ADVANCE.

Percentages of verifications of forecasts for second day in advance in December, 1891. Number of predictions made: weather, 346; temperature, 199. Percentages of verifications: weather, 87.8; temperature, 76.3; weather and temperature combined, 84.6.

WIND SIGNALS FOR DECEMBER, 1891.

Statement showing percentages of justifications of wind signals for December, 1891.

Wind Signals.—(Ordered by Major H. H. C. Dunwoody.)—Total number of signals ordered, 96; justified as to velocity, wholly, 74, partly, 9; justified as to direction, 92. Of the signals ordered, 73 were cautionary, of which 56 were wholly and 8 partly justified, and 23 were storm signals, of which 18 were wholly, and 1 partly justified. 30 signals were ordered for easterly winds, of which 28 were justified, and 66 signals were ordered for westerly winds, of which 64 were justified. Number of high winds without signals, 17. Number of signals ordered late, 16. Percentage of justification, 76.9.

COLD-WAVE SIGNALS FOR DECEMBER, 1891.

(Ordered by Major H. H. C. Dunwoody.)

Two hundred and thirty cold-wave signals were ordered, of which 170 were justified. Number of cold waves without signals, 24. Percentage of justifications, 70.2.